

**Notice of Allowability**

Application No.

10/043,739

Examiner

Christopher R. Magee

Applicant(s)

NAKAGAWA ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/23/2004.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 9/23/2004
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

  
**ANGEL CASTRO**  
**PRIMARY EXAMINER**

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 09/27/2004 has been entered.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 09/23/2004 was filed after the mailing date of the Notice of Allowance on 05/28/2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement.

### ***Response to Amendment***

3. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

4. The reply filed 5/10/2004 was applied to the following effect: All relevant objections and rejections are withdrawn as being satisfied.

***Reasons for Allowance***

5. Claims 1-20 are allowed.

The following is an examiner's statement of reasons for allowance:

This application is for a MAGNETIC HEAD ACTUATOR HAVING MOVABLE TRACKING DEVICE.

- **Claim 1** specifies a magnetic head actuator, which requires:

*"wherein the opening is defined by edges extending in a second plane substantially perpendicular to the first plane" and "a nonshrinkable adhesive contacting the opposed edges of the piezoelectric element and corresponding edges of the opening, the piezoelectric element having a voltage impressing electrode for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage"*

Wada (US Patent Application 2001/0004303A1) fails to teach or suggest a opening that is defined by edges extending in a second plane substantially perpendicular to the first plane and a nonshrinkable adhesive contacting the opposed edges of the piezoelectric element and corresponding edges of the opening, the piezoelectric element having a voltage impressing electrode for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage as claimed in the present invention.

Budde et al. (US 6,233,124 B1) teaches a piezoelectric element is suspended between two sections of the swing arm by an adhesive (col. 4, lines 3-11; figures 2 and 3) but does not teach or suggest the use of a nonshrinkable adhesive as claimed in the present invention.

Therefore, these features, in combination with other features of claim 1, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claim 8** specifies a magnetic head actuator, which requires:

*“wherein the opening is defined by edges extending in a second plane substantially perpendicular to the first plane” and “a nonshrinkable adhesive contacting the opposed edges of the piezoelectric element and corresponding edges of the opening, the piezoelectric element having a voltage impressing electrode for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage”*

Wada (US Patent Application 2001/0004303A1) fails to teach or suggest an opening that is defined by edges extending in a second plane substantially perpendicular to the first plane and a nonshrinkable adhesive contacting the opposed edges of the piezoelectric element and corresponding edges of the opening, the piezoelectric element having a voltage impressing electrode for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage as claimed in the present invention.

Budde et al. (US 6,233,124 B1) teaches a piezoelectric element is suspended between two sections of the swing arm by an adhesive (col. 4, lines 3-11; figures 2 and 3) but does not teach or suggest the use of a nonshrinkable adhesive as claimed in the present invention.

Therefore, these features, in combination with other features of claim 8, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claim 15** specifies a magnetic head actuator, which requires:

*“wherein the first and second openings are defined by edges extending in a second plane substantially perpendicular to the first plane” and “a nonshrinkable adhesive contacting the opposed edges of the first and second piezoelectric elements and corresponding edges of the first and second openings, each of the first and second piezoelectric elements having a voltage impressing electrode on a first face for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage, and a ground electrode on an opposite face”*

Wada (US Patent Application 2001/0004303A1) fails to teach or suggest first and second openings are defined by edges extending in a second plane substantially perpendicular to the first plane and a nonshrinkable adhesive contacting the opposed edges of the first and second piezoelectric elements and corresponding edges of the first and second openings, each of the first and second piezoelectric elements having a voltage impressing electrode on a first face for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage, and a ground electrode on an opposite face as claimed in the present invention.

Budde et al. (US 6,233,124 B1) teaches a piezoelectric element is suspended between two sections of the swing arm by an adhesive (col. 4, lines 3-11; figures 2 and 3) but does not teach or suggest the use of a nonshrinkable adhesive as claimed in the present invention.

Therefore, these features, in combination with other features of claim 15, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claim 16** specifies a magnetic head actuator, which requires:

*“wherein the base end, flexible section, and the free end are configured such that about a one micrometer contraction of the first or second piezoelectric elements creates about a ten micrometer arcuate movement about the coarse axis.”*

Neither Wada (US Patent Application 2001/0004303A1) nor Budde et al. (US 6,233,124 B1) fails to teach or suggest the base end, flexible section, and the free end are configured such that about a one micrometer contraction of the first or second piezoelectric elements creates about a ten micrometer arcuate movement about the coarse axis as claimed in the present invention.

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Therefore, these features, in combination with other features of claim 16, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claims 18 and 19** specify a magnetic head actuator, which requires:

*“wherein FPC board is mounted to a surface of the swing arm and spans the opening in the swing arm, and wherein the piezoelectric element is disposed in the opening, such that the piezoelectric element does not protrude above the surface of the swing arm.”*

Neither Wada (US Patent Application 2001/0004303A1) nor Budde et al. (US 6,233,124 B1) fails to teach or suggest a FPC board is mounted to a surface of the swing arm and spans the opening in the swing arm, and wherein the piezoelectric element is disposed in the opening, such that the piezoelectric element does not protrude above the surface of the swing arm as claimed in the present invention.

Therefore, these features, in combination with other features of claims 18 and 19, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claim 20** specifies a magnetic head actuator, which requires:

*“such that the piezoelectric element does not protrude above the surface of the swing arm.”*

Neither Wada (US Patent Application 2001/0004303A1) nor Budde et al. (US 6,233,124 B1) fails to teach or suggest a FPC board is mounted to a surface of the swing arm and spans the opening in the swing arm, and wherein the piezoelectric element is disposed in the opening, such

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that the piezoelectric element does not protrude above the surface of the swing arm as claimed in the present invention.

Therefore, these features, in combination with other features of claim 20, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Conclusion***


7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (571) 272-7592. The examiner can normally be reached on M-F, 8: 00 am-4: 30 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 5, 2006  
crm

  
**ANGEL CASTRO**  
**PRIMARY EXAMINER**

  
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